



Spectral Gamma-Ray Borehole
Log Data Report

Page 1 of 2

Borehole

21-02-03

Log Event A

Borehole Information

Farm : <u>BX</u>	Tank : <u>BX-102</u>	Site Number : <u>299-E33-145</u>
N-Coord : <u>45,500</u>	W-Coord : <u>53,208</u>	TOC Elevation : <u>655.56</u>
Water Level, ft :	Date Drilled : <u>8/31/1970</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

A driller's log could not be located for this borehole. However, Chamness and Merz (1993) indicate this borehole was drilled in August 1970 to a depth of 100 ft using 6-in. casing. The casing thickness is presumed to be 0.280 in., on the basis of the published thickness for schedule-40, 6-in. steel tubing. The top of the casing, which is the zero reference for the SGLS, is approximately 0.5 ft below the ground surface.

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>04/1997</u>	Calibration Reference : <u>GJO-HAN-13</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>05/12/1997</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>20.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>2</u>	Log Run Date : <u>05/13/1997</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>99.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>46.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>
Log Run Number : <u>3</u>	Log Run Date : <u>05/12/1997</u>	Logging Engineer: <u>Bob Spatz</u>
Start Depth, ft.: <u>47.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>19.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Borehole

21-02-03

Log Event A

Analysis Information

Analyst : S.D. Barry

Data Processing Reference : MAC-VZCP 1.7.9

Analysis Date : 07/08/1997

Analysis Notes :

This borehole was logged by the SGLS in three log runs. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during the logging operation.

Casing correction factors for a 0.280-in.-thick steel casing were applied during analysis.

The man-made radionuclides Cs-137, Co-60, Sb-125, and processed uranium were detected around this borehole. The presence of Cs-137 was measured almost continuously from the ground surface to a depth of 18 ft. Alternating zones of intermittent and continuous Cs-137 contamination were detected from 18 ft to the bottom of the logged interval (99 ft). The presence of Co-60 was detected at 93.5 and 94.5 ft. The presence of Sb-125 was detected between 83 and 84 ft. Processed uranium was identified in the interval between 73.5 and 99 ft.

The K-40 concentration values increase at about 41 ft. A distinct interval of decreased K-40 concentration values was identified between about 46 and 52 ft.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank BX-102.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.